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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,097	11/19/2003	Ravi Shankamarayan Adapathya	RPS9-2003-0183US1	7297

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EXAMINER

SHENG, TOM V

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/717,097	Applicant(s) ADAPATHYA ET AL.	
	Examiner Tom V. Sheng	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,10,12,14-21,24 and 26-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,10,12,14-21,24 and 26-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 10, 12, 14-21, 24 and 26-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levy et al. (US 7,044,614 B2), hereinafter Levy.

As for claim 1 and associated claims 10, 14, 15, 24 and 29, Levy teaches an apparatus (device 100; fig. 6) for demarking a control object (such as for highlighting; column 3 lines 57-59), the apparatus comprising:

a compound (photochromic compounds) applied to a control object to form a designator upon the control object (function buttons 112 each can have a portion that changes color and further changes in correspondence with the change in color; column 5, line 62 through column 6, line 1), the compound configured to react to visible and non-visible light by radiating visible light (the function buttons 112 can serve as the numeric and function keypads for the calculator when exposed to an external UV source and the same function buttons 112 can serve as the function keys for a clock radio when not exposed to an external UV source; column 6 lines 4-10) and wherein the designator distinctly identifies the control object (though not illustrated in any figures, it is inherent that under clock radio mode and calculator mode the buttons would display different symbols, that is designators, corresponding to the respective modes); and

a non-visible light source configured to directly radiate the compound (exposed to

Art Unit: 2629

an external UV source such as UV-LEDs 108, 109 and lightpipe 110; column 5 lines 48-51) so that the compound radiates visible light in the form of the designator (as analyzed above, when under external UV light, symbols for calculator mode would be visible from the buttons 112). See also fig. 7 and column 6 lines 15-39 for detailed steps.

Levy does not teach that the visible light (emitted/reflected from the buttons) is of low intensity so as not to distract a user and nearby people. On the other hand, it is well known that in calculator mode (the mode at which external UV light is used), a user would not need high light intensity emitted/reflected from the buttons to see, especially true in a dim setting. This serves to save power from using a strong UV light, as well as the need of ambient light. Moreover, it would be appropriate to have low emission from the buttons since the setting is usually with low or no ambient light, and too high an emission from the buttons would be distracting to persons nearby.

Therefore, it would have been obvious to apply just sufficient compound to the buttons 112 (or alternatively apply a determined level of UV light) such that the compound (from the buttons) would radiates low intensity to an user that is sufficient yet not overly bright to distract other people and is further power saving, when used in low ambient light or a dim setting.

As for claims 2-3, 12, 16-17, 26 and 28, both UV-LEDs 108 and 109 (fig. 6) are ultraviolet light emitting diode (column 5 lines 48-51).

Art Unit: 2629

As for claims 4, 18 and 27, Levy teaches that the photochromic compound reacts to the UV light from UV-LEDs 108 and 109 (fig. 6; column 5 lines 62-64 and column 6 lines 4-10).

As for claim 19, the UV-LEDs 108, 109 and lightpipe 110 are integrated in the device 100 as shown (fig. 6).

As for claims 20, 31, 32, 34 and 35, Levy teaches alternative use of an external UV source by means of the UV-LEDs 108, 109 and lightpipe 110 (fig. 6; column 5 lines 39-42); however, Levy does not teach the external UV source disposed upon a positioning stalk in physical communication with the I/O device.

On the other hand, Levy teaches in another embodiment (fig. 3) where an external and detached UV light source 35 is provided (column 3 lines 22-36). One of ordinary skill in the art would recognize that this light source 35 could either be separated from the I/O device or attached to the I/O device in order to receive power, by means of a rigid or semi-rigid connector. Moreover, using an attached light source is beneficial as the positioning can be controlled easily.

Therefore, it would have been obvious to provide a UV light source in a stalk-like connection in physical communication with the I/O device, as this allows a flexible positioning of the light source above the control object, and with power for the light source derived directly from the I/O device. Moreover, this light source can be detached when this demarking is not needed, such as in the presence of sufficient ambient light.

Art Unit: 2629

As for claim 21, Levy teaches alternative use of an external UV source (fig. 6; column 5 lines 39-42; or like light source 35 shown in fig. 3) that corresponds to claimed separated non-visible light source.

Claim 30 is rejected based on rejections of claims 2-4.

As for claim 33, Levy teaches a LC display 106 with UV-LEDs 108, 109 and lightpipe 110 around the display. Levy does not teach having the UV light sources on the display. One of ordinary skill in the art would recognize however that, in the case of transmissive LCD, the existing backlight could simply be modified to provide UV lights in certain scenarios. This is advantageous as it removes the need to provide areas on the device 100 for the light sources, as is currently occupied by the UV-LEDs and/or the lightpipe, allowing the device to be more compact.

Therefore, it would have been obvious to modify Levy's device 100 by further having UV light source "on" the display 106, thus eliminating the need for UV-LEDs and/or lightpipe, allowing the device 100 to be more compact.

Response to Arguments

3. Applicant's arguments, see pages 9-14, filed 11/3/2006, with respect to the rejection(s) of claim(s) 1, 10, 14, 15, 24 and 29 under 35 USC 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of Levy.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Sheng

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

